Title: InCoCo-S Business Game User Manual
Ref: InCoCo\APH\LCJ
Issue: 00.01

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InCoCo-S Business Game
User Manual

Issue: 00.01

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1 Installing the Business Game

1.1 System Requirements

To use the Business Game, you must have:

- An Internet Connection
- Microsoft Internet Explorer Version 6 or above:

1.2 Linking to the Game

To link to the InCoCo-S Business Game, enter the following link into Internet Explorer:

http://www.ventanasystems.co.uk/InCoCoGame.html

It is recommended that you add the page link to your list of favourites

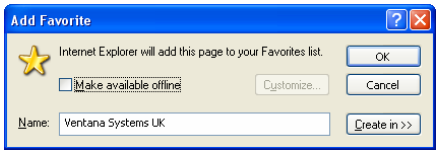


Figure 1 - Adding link to favourites in Internet Explorer

Please note: At present, the web based Business Game will only work in Internet Explorer Version 6. If your default browser is something different, such as Firefox, the link will not work correctly.

To run the business game, click on the "Play" button.

1.3 Installing For First Time

If it is the first time the Business Game has been accessed by the computer, a browser plug-in will be required to be installed. If this is the case, the following dialog box will appear automatically.

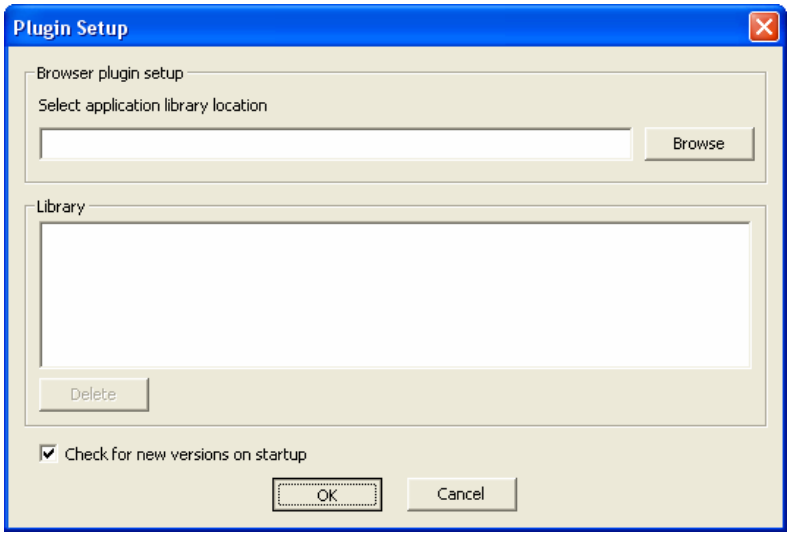


Figure 2 - Plug-in setup Dialog

Enter the location path for the local model library using the browse button. Then click on OK

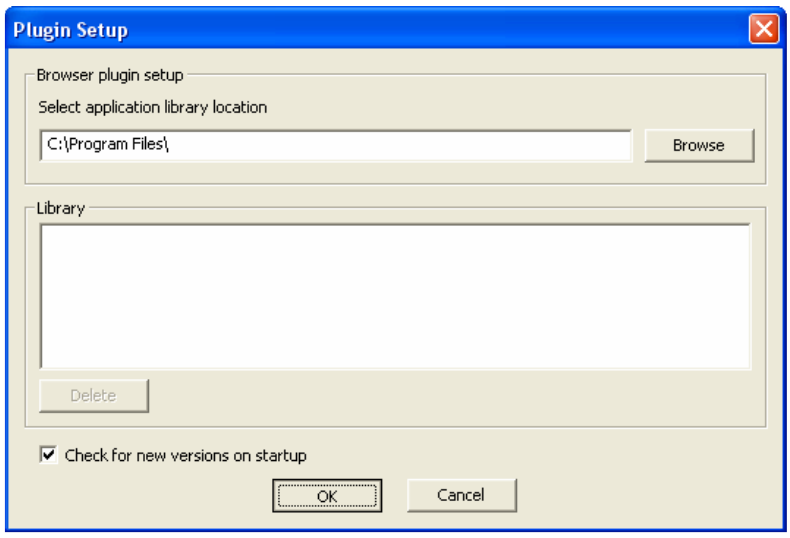


Figure 3 - Completed Plug-in Setup

The Plug-in will then automatically install. Next you will be asked if you would like to install the package into the library destination you have just specified.

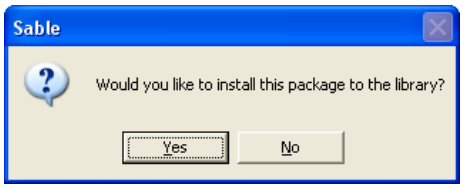


Figure 4 - Installing game package

Click on OK and the Business Game package will install. As it installs you will see the download dialog box shown below.

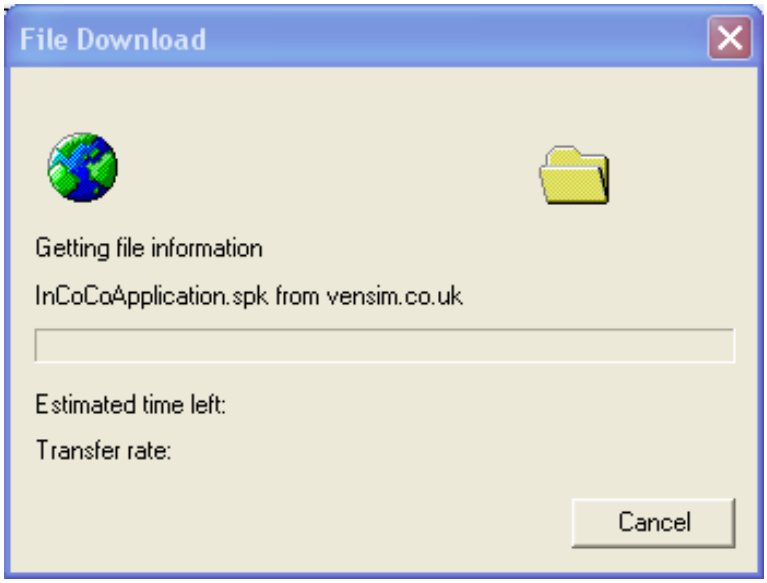


Figure 5 - Downloading business game

When the package has installed, the splash screen below will briefly appear

Figure 6 - Business Game Splash Screen

Followed by the introductory screen for the Business Game.

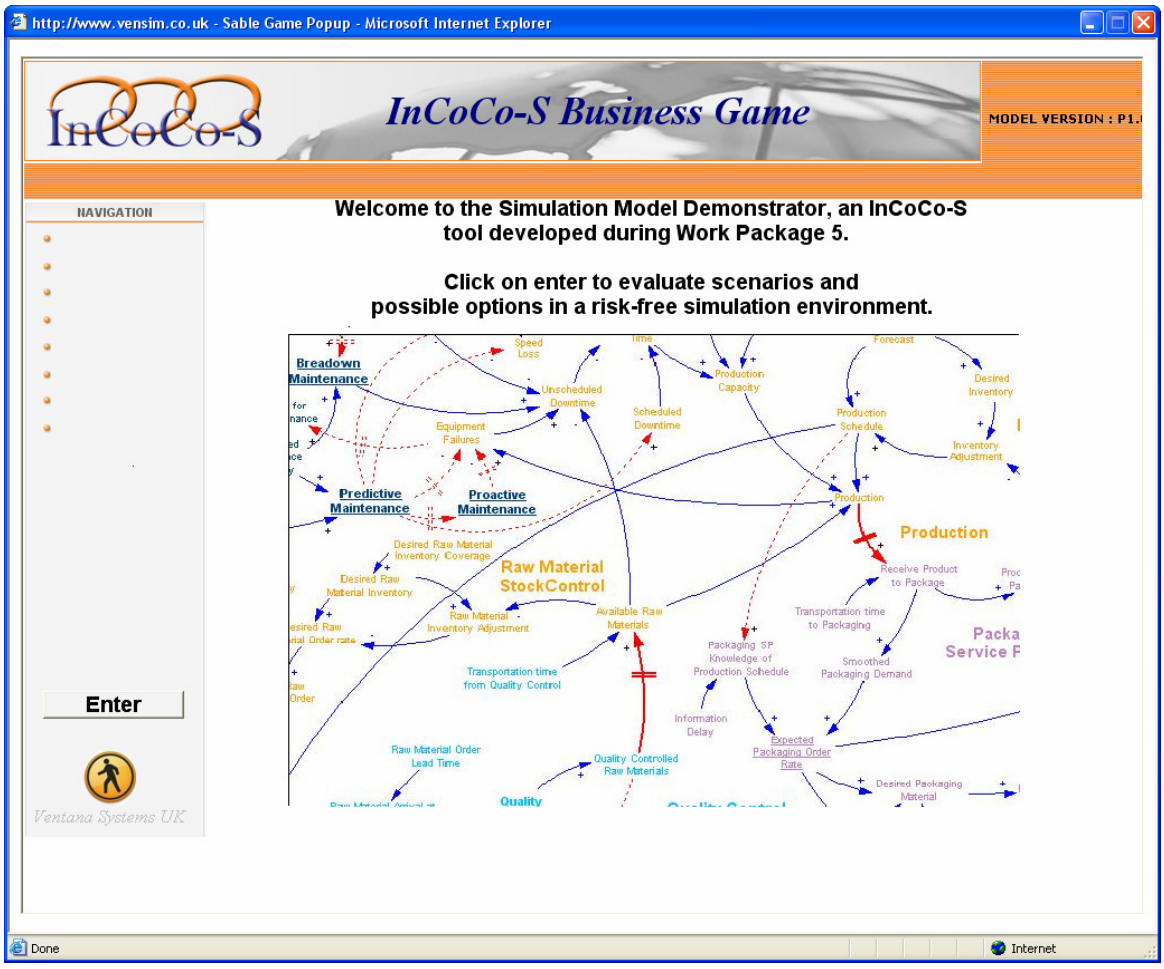

http://www.vensim.co.uk - Sable Game Popup - Microsoft Internet Explorer
InCoCo-S Business Game
MODEL VERSION : P1.
NAVIGATION
Welcome to the Simulation Model Demonstrator, an InCoCo-S tool developed during Work Package 5.
Click on enter to evaluate scenarios and possible options in a risk-free simulation environment.
Breadown Maintenance
Predictive Maintenance
Proactive Maintenance
Raw Material StockControl
Production
Enter
Ventana Systems UK
Done
Internet

Figure 7 - Business Game Introductory Screen

The Business Game is now ready to play

1.4 Subsequent Usage

If it is not the first time the Business Game has been used on the computer, there is no requirement for the Plug-in to be downloaded, unless there has been a software update.

On subsequent uses of the Business Game, clicking on the link (Section 1.2) will prompt the user that the model is already available in the library. Click OK to continue

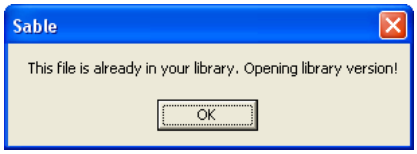


Figure 8 - Library check dialog

The game will then check to see if there is a newer version of the Business Game available on the host server. If there is, you will be asked if you wish to download the newer version

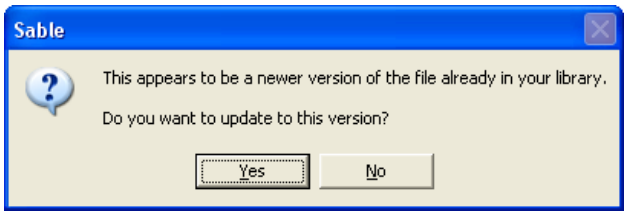


Figure 9 - Update library dialog

When the package has installed, the splash screen below will briefly appear (Figure 6) followed by the introductory screen for the Business Game (Figure 7).

The Business Game is now ready to play.

2 Navigation Map

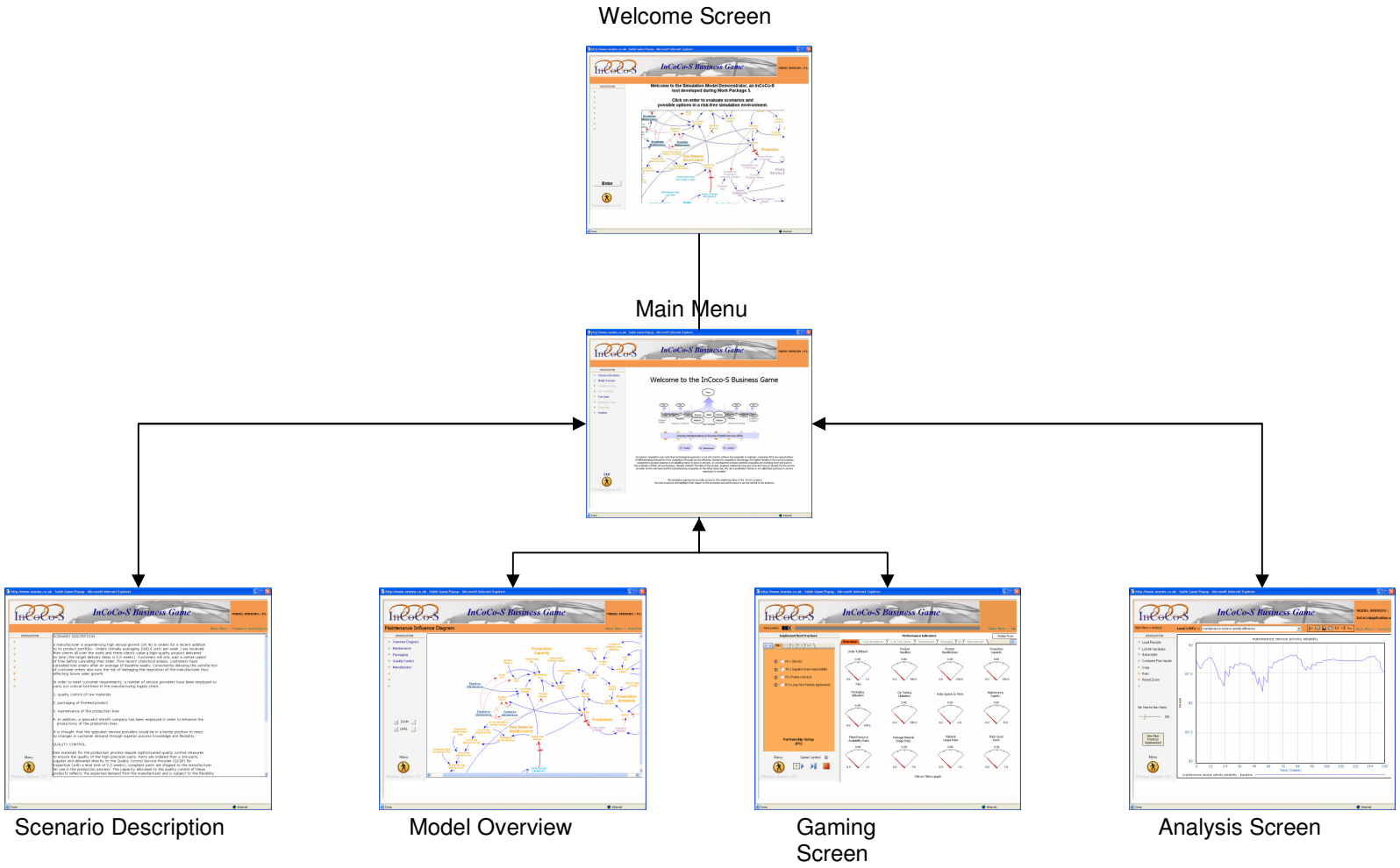


Figure 10 - Navigation Map

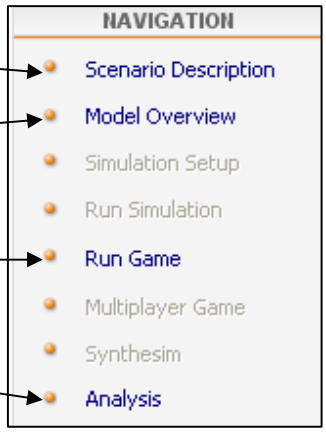
2.1 Welcome Screen

Navigates to the Main Menu only. Click on the Enter button.

2.2 Main Menu

Navigate to :

- Scenario Description
- Model Overview
- Gaming Screen
- Analysis Screen



Greyed out Menu options are currently not available.

To exit the Business Game, click on

2.3 Scenario Description

Navigates to: Main Menu

2.4 Model Overview

Navigates to: Main Menu

2.5 Gaming Screen

Navigates to: Main Menu

2.6 Analysis Screen

Navigates to: Main Menu

Closing the browser window will also close the Business Game

3 Welcome Screen

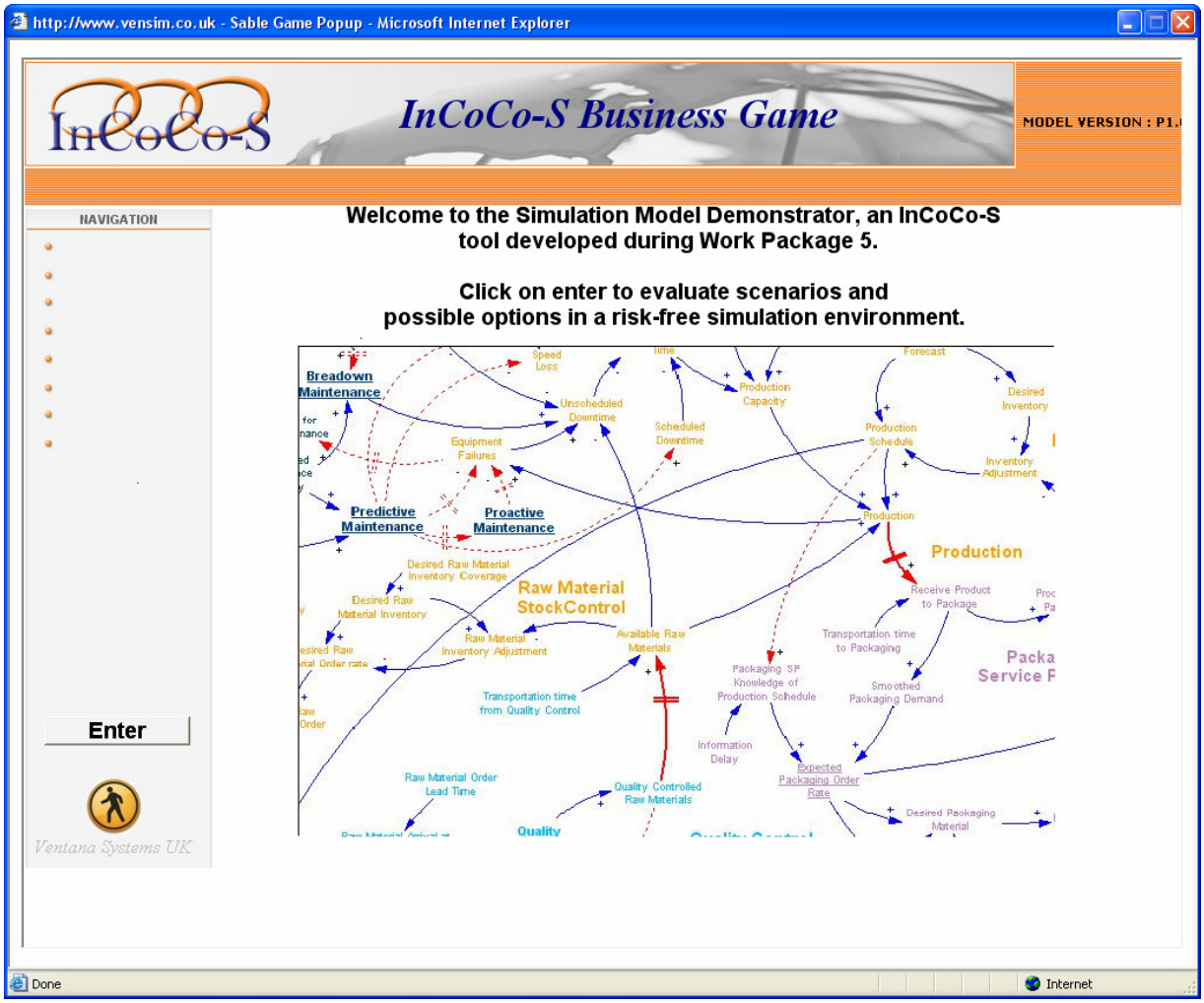

http://www.vensim.co.uk - Sable Game Popup - Microsoft Internet Explorer
InCoCo-S Business Game
MODEL VERSION : P1.
NAVIGATION
Welcome to the Simulation Model Demonstrator, an InCoCo-S tool developed during Work Package 5.
Click on enter to evaluate scenarios and possible options in a risk-free simulation environment.
Enter
Ventana Systems UK
Breadown Maintenance
Predictive Maintenance
Proactive Maintenance
Raw Material StockControl
Production
Done
Internet

Figure 11 - Welcome Screen

The Welcome screen provides an introduction to the Business Game. The current game version is displayed in the top right corner.

There are no user options available on this screen, except to navigate to the Main Menu by clicking on

4 Main Menu

http://www.vensim.co.uk - Sable Game Popup - Microsoft Internet Explorer
InCoCo-S
InCoCo-S Business Game
NAVIGATION
Scenario Description
Model Overview
Simulation Setup
Run Simulation
Run Game
Multiplayer Game
Synthesim
Analysis
EXIT
Ventana Systems UK
Welcome to the InCoco-S Business Game
Plan
Source
Make
Deliver
Return
Supplier
Customer
Your Company
Internal or External
Growing Interdependence on Business Related Services (BRS)
SP - Quality
SP - Maintenance
SP - Logistics
As market competition rises and clear technological superiority is not only hard to achieve but especially to maintain, companies find new opportunities of differentiating themselves from competitors through service offerings. Beside the competitive advantage, the higher margins in the service business compared to product business is an impelling factor to grow in services. In consequence product-oriented companies are investing more and more in the extension of their service business. Already stated in the idea of this project, business related services are more and more of interest for the service provider on the one hand and the manufacturing companies on the other hand. But why are coordination metrics or so-called best practices in service important to consider?
This simulation gaming tool provides access to the underlying ideas of the InCoCo project, the best practices and highlights their impact on the processes and performance in service central to the business.
Done
Internet

Figure 12 - Main Menu Screen

The Main Menu provides additional background information about the Business Game.

There are five navigation options available:

- Scenario Description
- Model Overview
- Run Game
- Analysis
- Exit Game

The greyed options are not yet available. Exiting any of the subsequent screens outlined below will always return the user to this Main Menu screen.

5 Scenario Description

http://www.vensim.co.uk - Sable Game Popup - Microsoft Internet Explorer
InCoCo-S
InCoCo-S Business Game
MODEL VERSION : P1.
Main Menu > Sceanrio Descriptio
NAVIGATION
SCENARIO DESCRIPTION
A manufacturer is experiencing high annual growth (25 %) in orders for a recent addition to its product portfolio. Orders (initially averaging 1000.0 units per week) are received from clients all over the world and these clients value a high-quality product delivered on time (the target delivery delay is 2.0 weeks). Customers will only wait a certain peiod of time before cancelling their order, from recent statistical analsis, customers have cancelled late orders after an average of Baseline weeks. Consistently delaying the satisfaction of customer orders also runs the risk of damaging the reputation of the manufacturer thus affecting future sales growth.
In order to meet customer requirements, a number of service providers have been employed to carry out critical functions in the manufacturing supply chain;
1. quality control of raw materials
2. packaging of finished product
3. maintenance of the production lines
4. In addition, a specialist retrofit company has been employed in order to enhance the productivity of the production lines.
It is thought that the specialist service providers would be in a better position to react to changes in customer demand through superior process knowledge and flexibility.
QUALITY CONTROL
Raw materials for the production process require sophisticated quality control measures to ensure the quality of the high-precision parts. Parts are ordered from a 3rd-party supplier and delivered directly to the Quality Control Service Provider (QCSP) for inspection (with a lead time of 2.0 weeks), compliant parts are shipped to the manufacturer for use in the production process. The capacity allocated to the quality control of these products reflects the expected demand from the manufacturer and is subject to the flexibility
Menu
Ventana Systems UK
Done
Internet

Figure 13 - Scenario Description Screen

The Scenario Description screen outlines the background to the Business Game. It described a fictitious manufacturing company which is experiencing high growth for a recent product line it has introduced.

To meet the growth, the company has outsourced to service providers to maintain the quality assurance of raw materials, the packaging of finished products, the maintenance of the production lines and to a retrofitter to improve the productivity of the production lines.

The scenario description provides data on the key aspects of the company and should be used as a guide when playing the Business Game.

There are no user options available on this screen, except to navigate to the Main Menu by clicking on

6 Model Overview

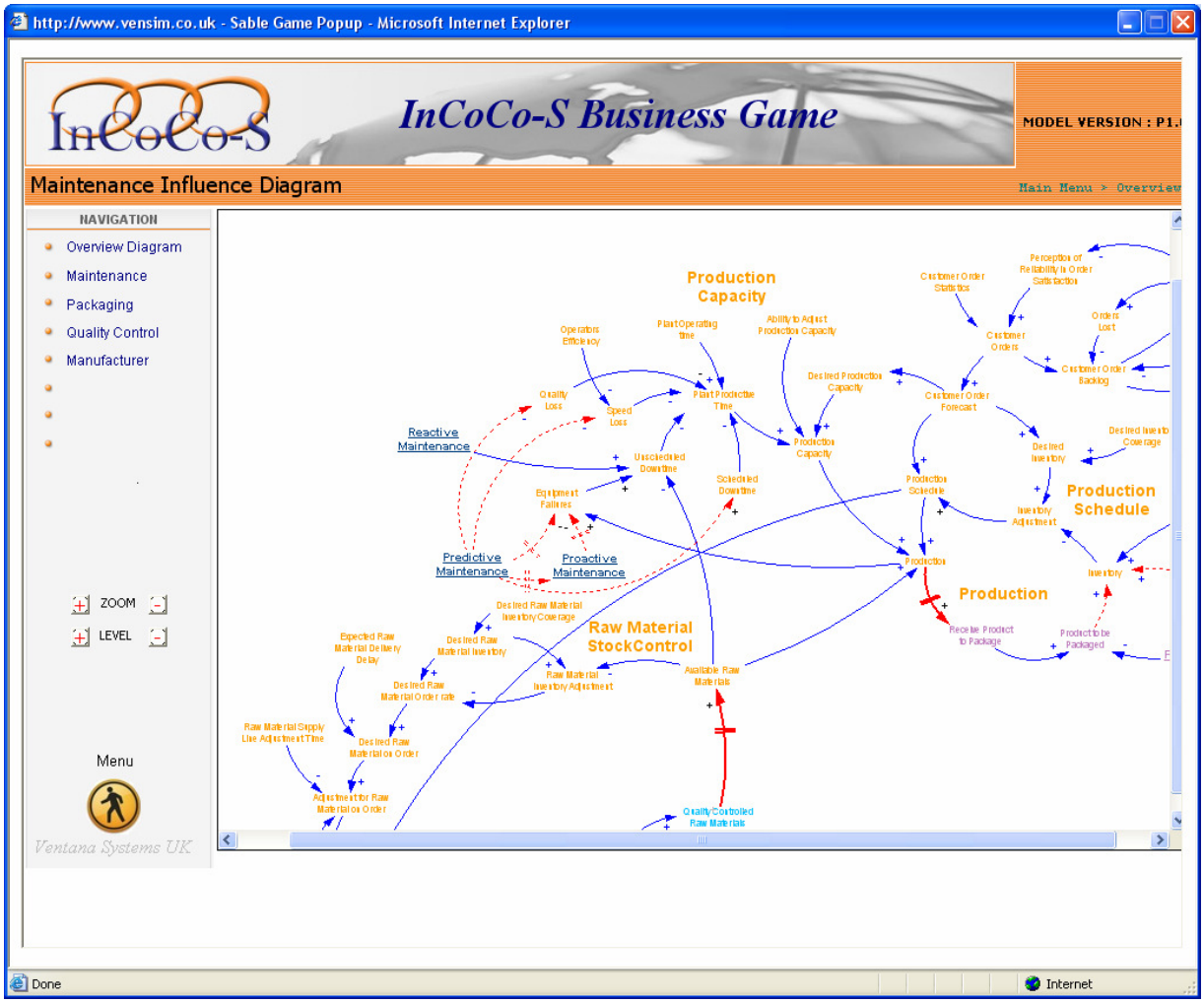


Figure 14 - Model Overview Screen

The Influence Diagram screen lets the user view the underlying structure of the Business Game. There are five influence diagrams to choose from:

1. Overview
2. Maintenance
3. Packaging
4. Quality Control
5. Manufacturing

Arrows show the cause and effect influences between any two variables in the system with closed loops denoting feedback.

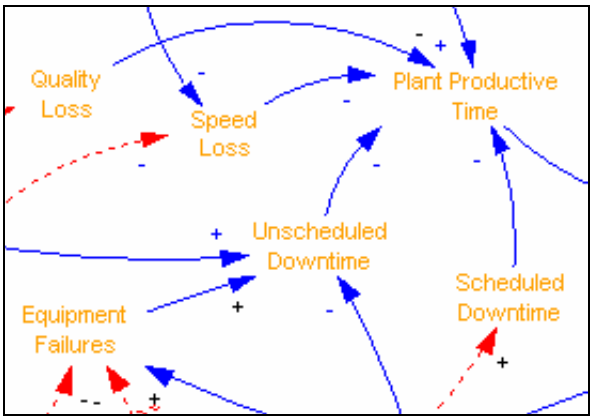


Figure 15 - Example Influence Diagram

In the example taken from the Maintenance Diagram, an increase in "Equipment Failures" increases the amount of "Unscheduled Downtime". However, if "Equipment Failures" are reduced, so will the amount of "Unscheduled Downtime". This type of relationship is denoted by the "+" sign at the arrow head, where a change at the tail of the arrow causes the same type of change at the head.

"Unscheduled Downtime" in turn reduces the "Plant Productive Time". So if "Unscheduled Downtime" increases, "Plant Productive Time" will be reduced. If "Unscheduled Downtime" decreases, "Plant Productive Time" will increase. This type of relationship is denoted by the "-" sign at the arrow head, where a change at the tail of the arrow causes the opposite type of change at the head.

To view a diagram, click on the appropriate navigation link. If the diagram is too large to fit in the viewing area, use the scroll bars to move around the diagram. Alternatively, use the tools to zoom in or zoom out to the desired resolution.

To return to the Main Menu, click on the icon.

7 Gaming Screen

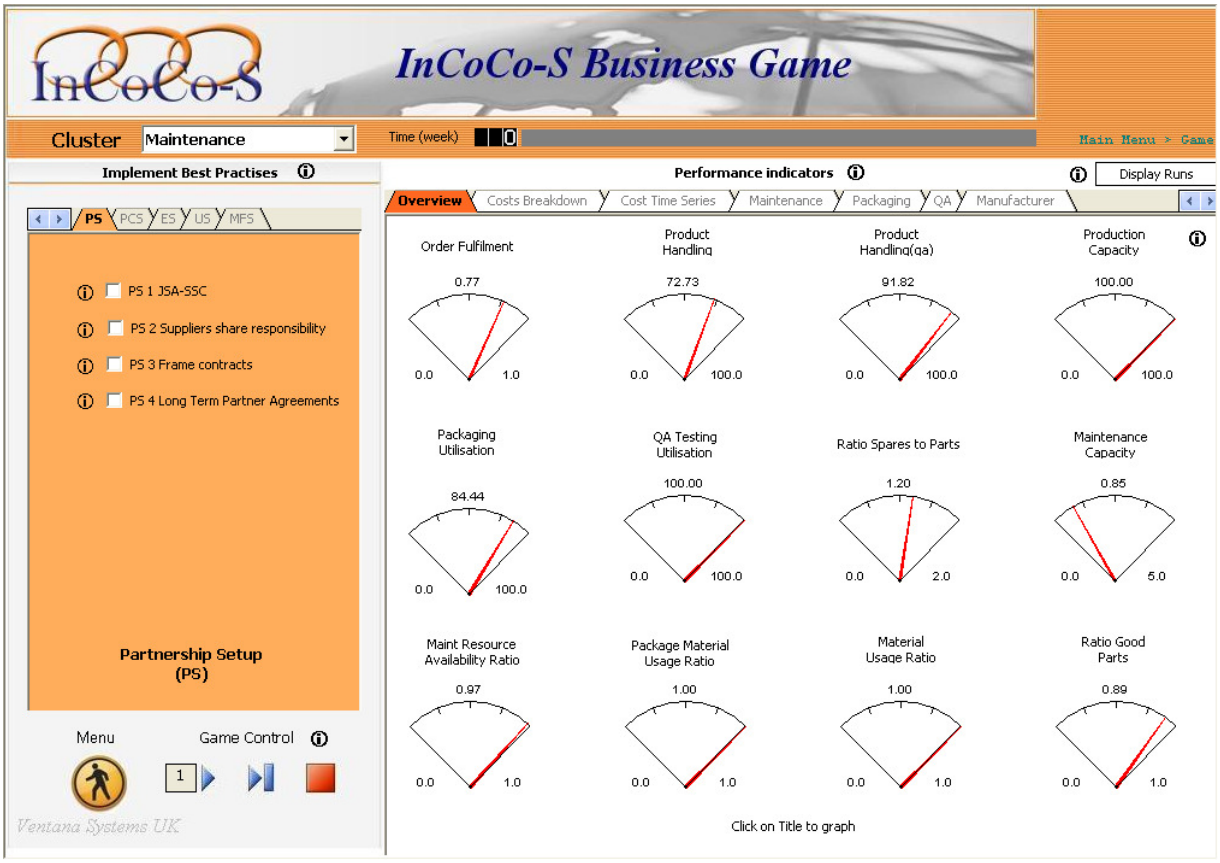


Figure 16 - Gaming Screen

The Gaming Screen allows the user to play the Business Game. When selecting the "Run Game" option from the Main Menu, the user will be prompted to enter a filename. This file will be used to store all the results generated from playing the Business Game.

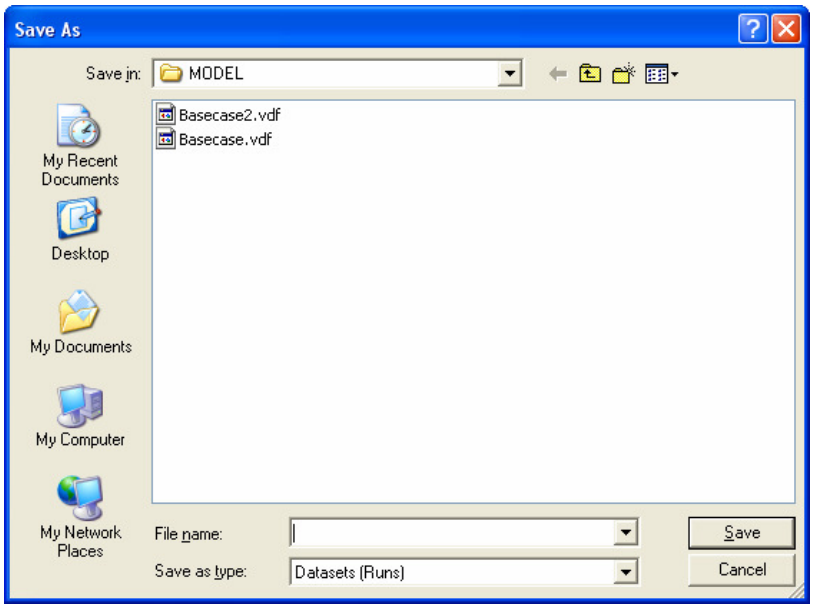
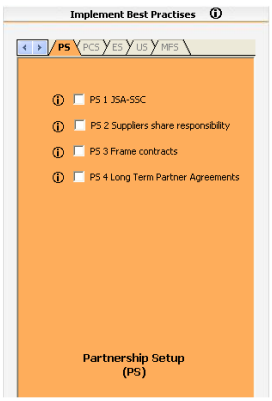


Figure 17 - Naming the Game

Once a filename has been entered, the user will be presented with the gaming interface. This screen is divided into three parts:

Game Decisions

Status Indicators



Game Control

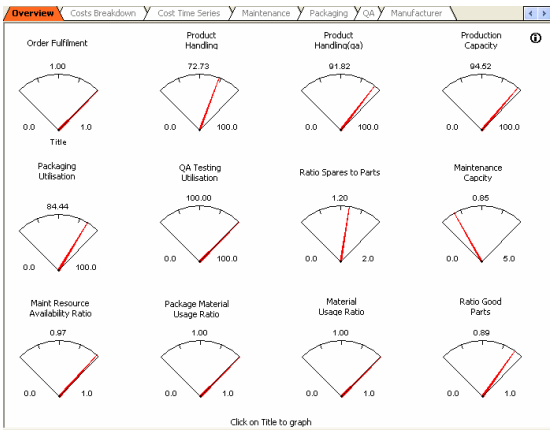


Figure 18 - Gaming Screen Sections

7.1 Game Decisions

The Gaming Decisions the user can make are based on the implementation of Best Practices. The Best Practices have been sub-divided into 5 categories:

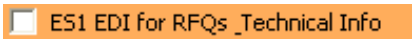
1. PS Partnership Setup
2. PCS Partnership and Collaboration Support
3. ES Electronic Support
4. US Universal Best Practices
5. MFS Manufacturing oriented Best Practices

To select a particular service provider to make decisions for, click on the "cluster" drop-down box.

To move been each category, click on the relevant tab. As the game progresses, at each time it is paused new gaming decisions can be made. When a new check box is selected, that Best Practice will be implemented. However, the benefit of implementing the best practice may not immediately appear.

Example : The maintenance service provider wishes to implement the Best Practice for Electronic Data Interchange (ES1) at six weeks into the game.

- Advance the game to week 6 (see section 7.2)
- Select "Maintenance" from the "Cluster" drop-down box.
- Click on the ES tab
- Click in the check box along side "ES2 –Electronic Catalogues"



Any number of Best Practices can be implemented at any stage. For more information about each of the Best Practices, click on the icon for more details.

7.2 Game Control

When the user enters the gaming screen, the game is automatically initiated to time zero (Week 0). Gaming decisions for implementing Best Practices (Section 7.1) can be made at this time if required.

To Advance the game, enter the number of weeks to advance in the box and then click on (play icon) . This will advance the game by 6 weeks. As it advances, the status indicators (section 7.3) will reflect the performance of the networked business.

After the game has advanced, new Best Practices can be implemented if desired by selecting the relevant check boxes. The user can then enter how many weeks to advance the game, and then advance it by clicking on the play icon again.

The game is designed to run for three years (156 weeks). If the user has implemented all of the Best Practices they require, the game can be advance to the end of the 3 years by clicking on

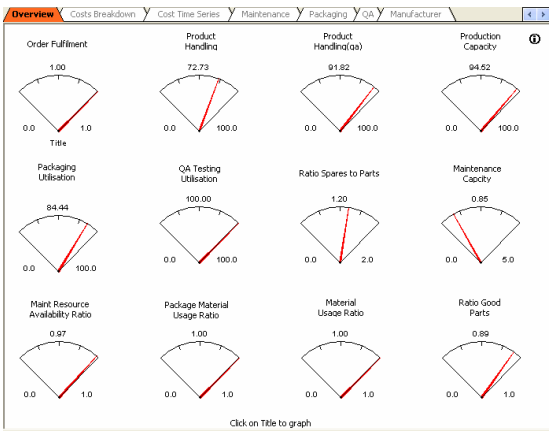
To terminate a game at any point, click on the stop icon

On screen help for the game control features can be accessed by clicking on

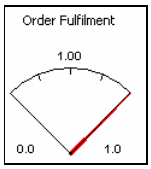
7.3 Status indicators

The Status Indicator panel provides the user with information on how well the networked business is performing. There are seven tabbed panels to choose from:

1. Overview
2. Cost Breakdown
3. Cost Time Series
4. Maintenance
5. Packaging
6. QA
7. Manufacturer



7.3.1 Overview

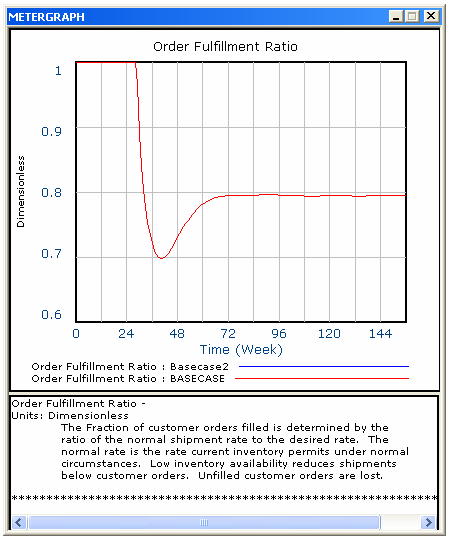


The overview panel contains 12 status meters. By clicking on the title above each meter, a pop up window will appear

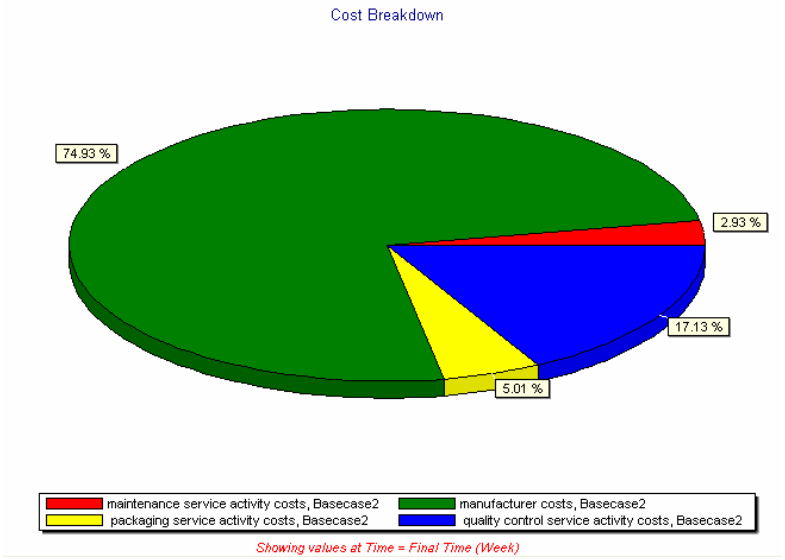
This window will display the value of the status indicator form the start of the game. Below that will be a description of the indicator and the units that it is measured in.

To close the pop up window, click on the X in the top right hand corner.

As the game time progresses, the status meters will change to reflect the situation being simulated



7.3.2 Cost Breakdown



The Cost Breakdown pie chart displays the percentage of total manufacturer costs at the current week in the current business game. The costs are sub-divided into:

- Maintenance Costs

- Packaging Costs
- QA Control Costs
- Manufacturer Costs

As the game progresses, the pie chart updates to always display the breakdown at the current game time.

7.3.3 Cost Time Series

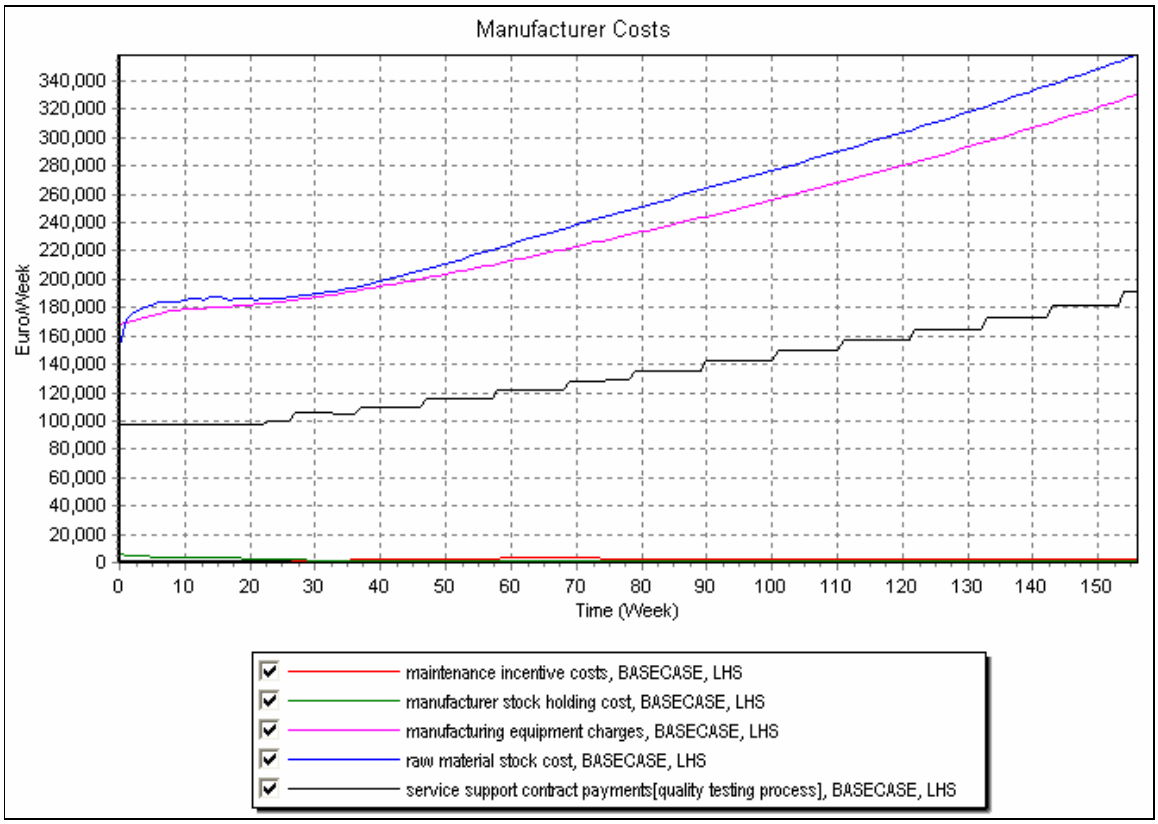


Figure 19 - Cost Time Series Chart

The Cost Time Series chart displays the breakdown in costs to the manufacturer since the start of the game. The costs plotted are:

- Maintenance Incentive Costs
- Manufacturer Stock Holding Costs
- Manufacturer Equipment Charges
- Raw Material Stock Costs
- Service Support Contract Payments

Lines can be removed from the chart by unselecting the check boxes in the graph legend.

7.3.4 Maintenance

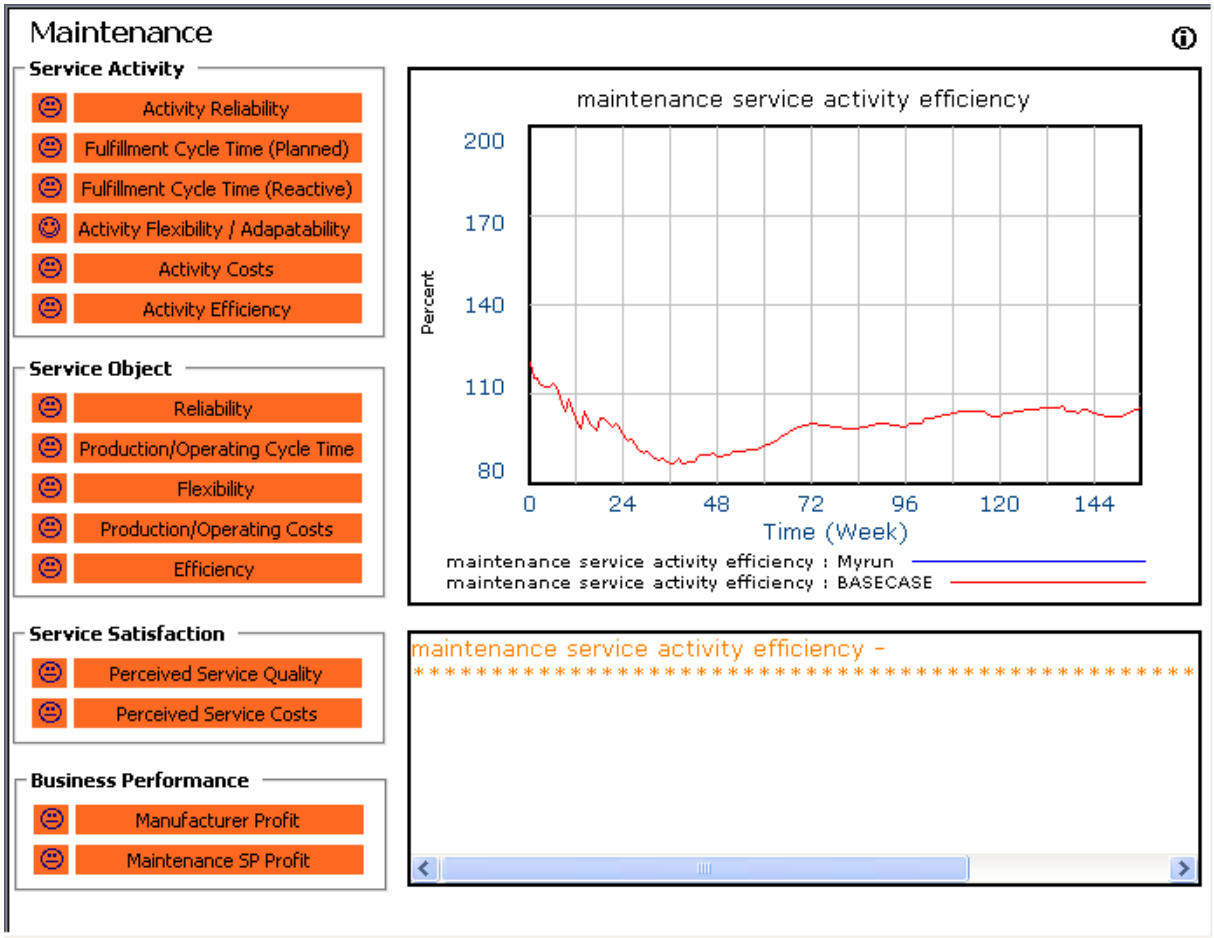


Figure 20 - Maintenance Service Provider Output

Key performance indicators (PI) from the Service Support Measurement System (SPMS), developed by the InCoCo-S consortium, are displayed.

Selecting any of the PI's will cause the graph to display the selected PI and provide a fuller description of the parameter in the lower window.

Alongside each of the parameter selection buttons is a face icon.

Normal face: Average parameter value neither improving nor worsening

Sad Face: Parameter value is worsening

Happy Face: Parameter value is improving

7.3.5 Packaging

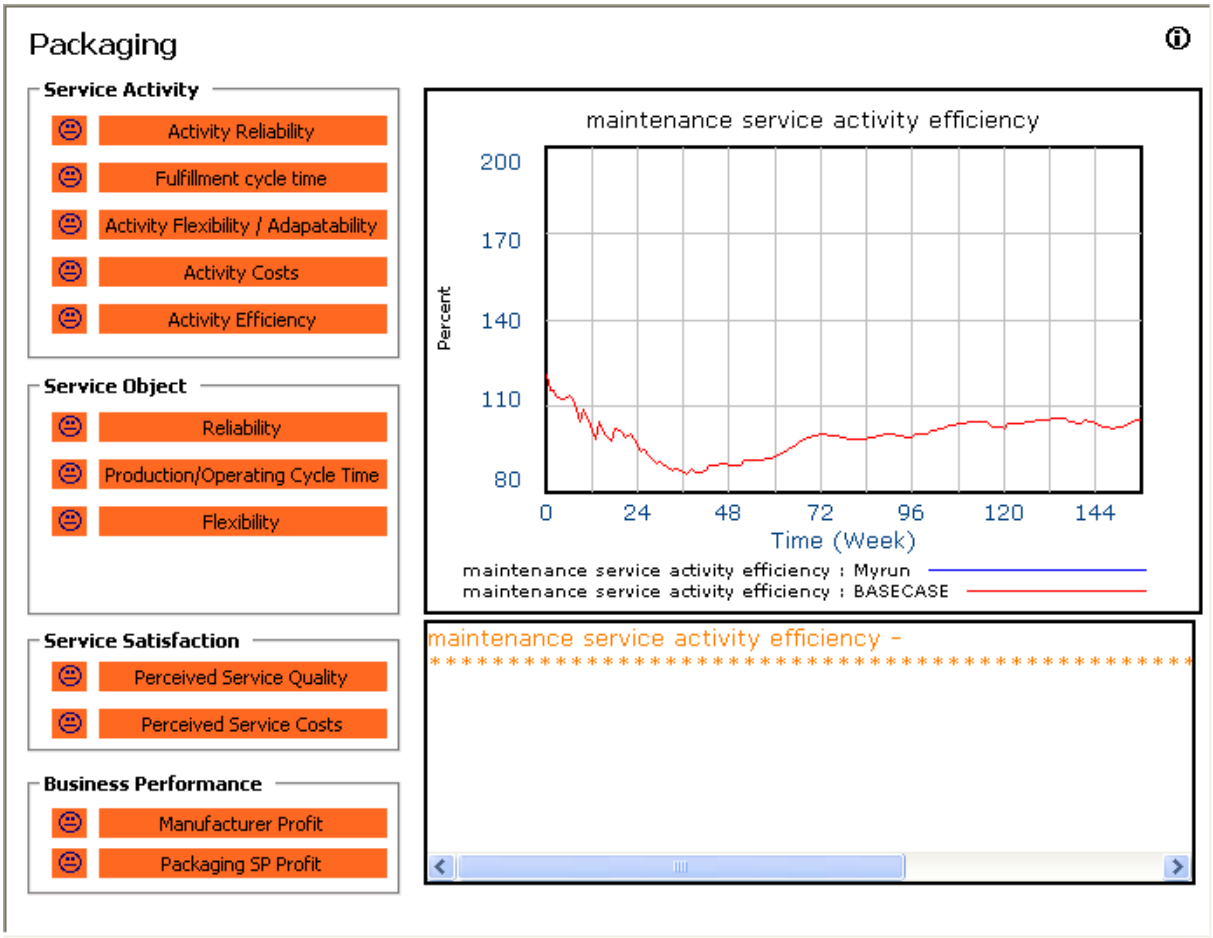


Figure 21 - Packaging Service Provider Output

Key performance indicators (PI) from the Service Support Measurement System (SPMS), developed by the InCoCo-S consortium, are displayed.

Selecting any of the PI's will cause the graph to display the selected PI and provide a fuller description of the parameter in the lower window.

Alongside each of the parameter selection buttons is a face icon.

Normal face: Average parameter value neither improving nor worsening

Sad Face: Parameter value is worsening

Happy Face: Parameter value is improving

7.3.6 Quality Control

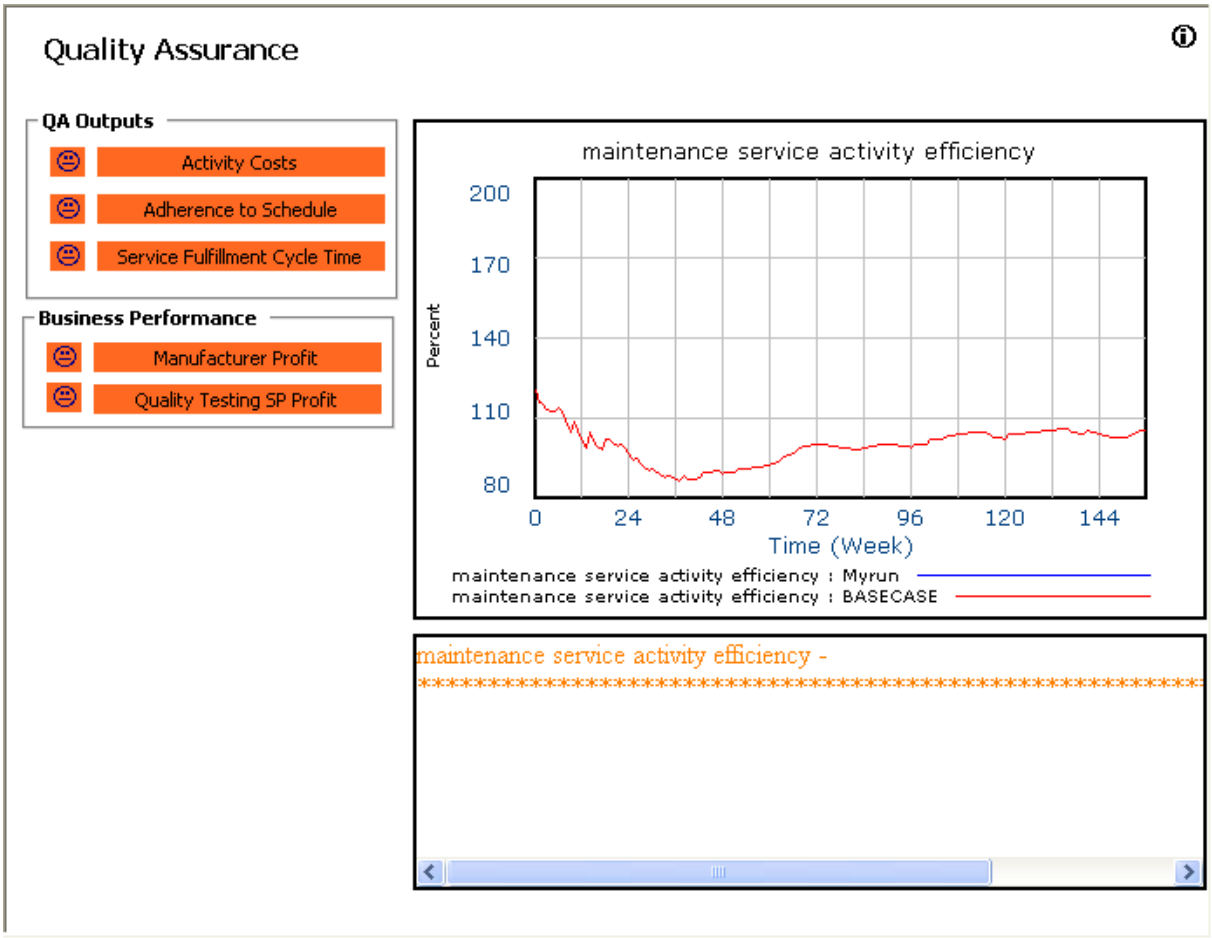


Figure 22 - Quality Control Service Provider Output

Key performance indicators (PI) from the Service Support Measurement System (SPMS), developed by the InCoCo-S consortium, are displayed.

Selecting any of the PI's will cause the graph to display the selected PI and provide a fuller description of the parameter in the lower window.

Alongside each of the parameter selection buttons is a face icon.

Normal face: Average parameter value neither improving nor worsening

Sad Face: Parameter value is worsening

Happy Face: Parameter value is improving

7.3.7 Manufacturer

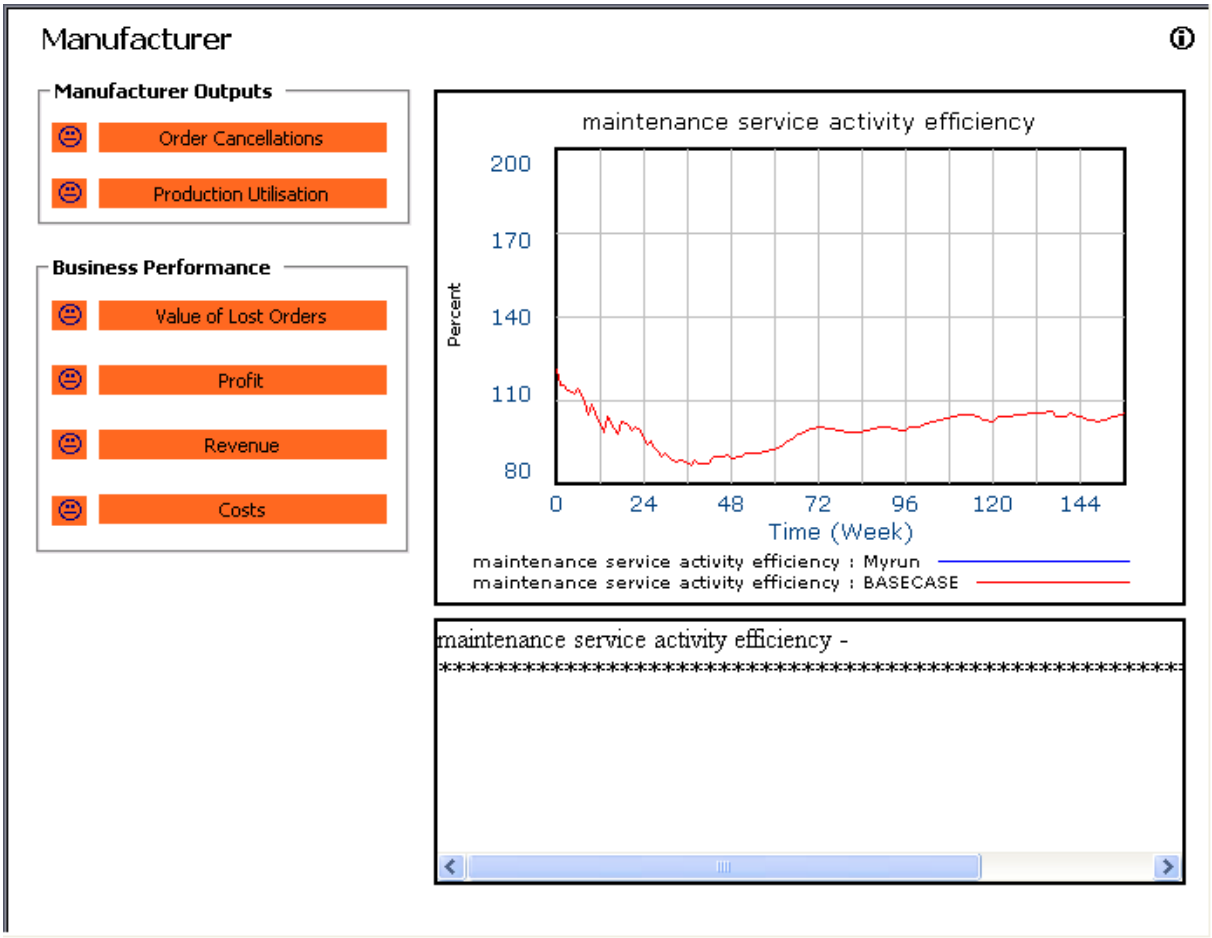


Figure 23 - Manufacturer Output

Key performance indicators are displayed.

Selecting any of the PI's will cause the graph to display the selected PI and provide a fuller description of the parameter in the lower window.

Alongside each of the parameter selection buttons is a face icon.

Normal face: Average parameter value neither improving nor worsening

Sad Face: Parameter value is worsening

Happy Face: Parameter value is improving

8 Analysis Screen

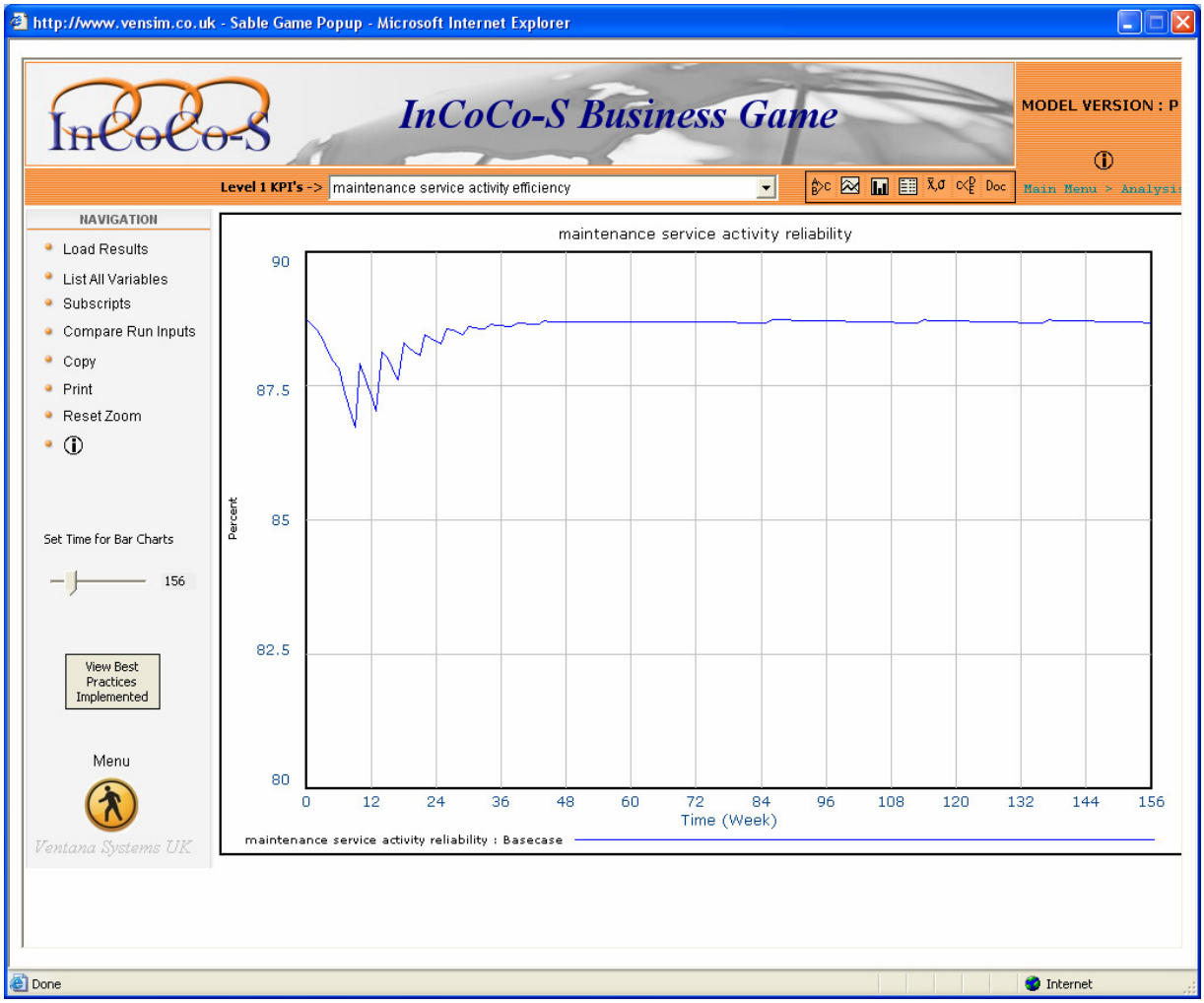


Figure 24 - Analysis Screen

The Analysis Screen allows the user to investigate the results of any of the Business Games played in more detail. When you access the Analysis screen from the Main Menu, the user is prompted for the name of the run(s) they wish to look at.

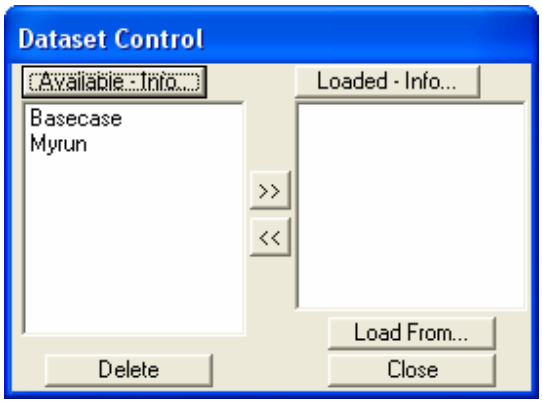


Figure 25 - Dataset Control Dialog

To select a run, move it to the right-hand window by double clicking on it.

A list of the Level 1 Key Performance Indicators (PI's) can be accessed from the dropdown list for quick access:

When a new PI is selected, the chart window will update to display the new parameter.

A selection of analysis tools can be used by clicking on the tool icons shown below.

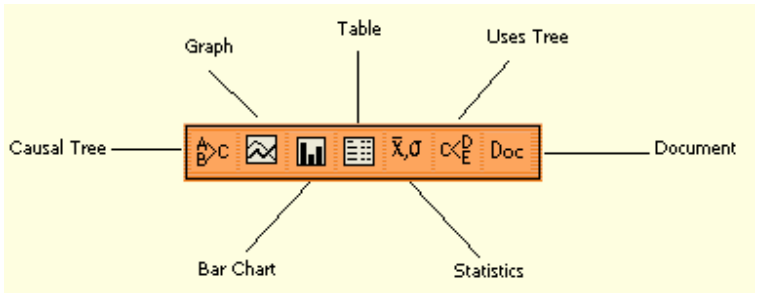
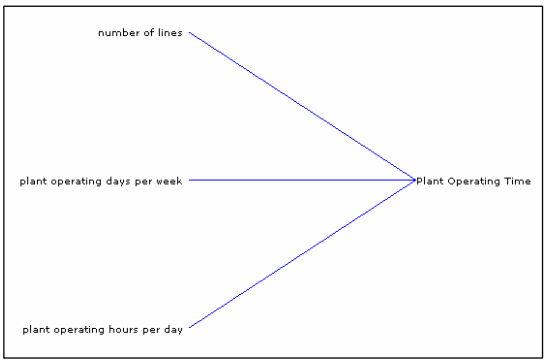


Figure 26 - Analysis Tools

Causal Tree

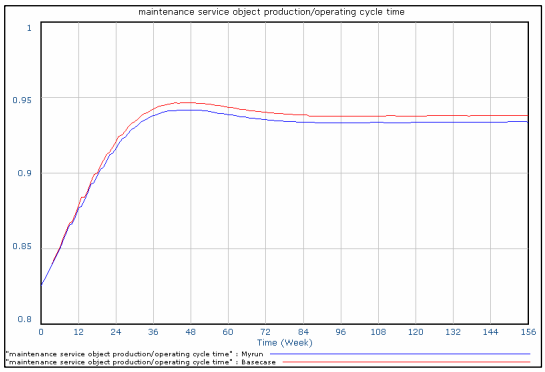
The Causal Tree diagram displays which other model parameters directly influence the PI



Title: InCoCo-S Business Game User Manual
Ref: InCoCo\APH\LCJ
Issue: 00.01

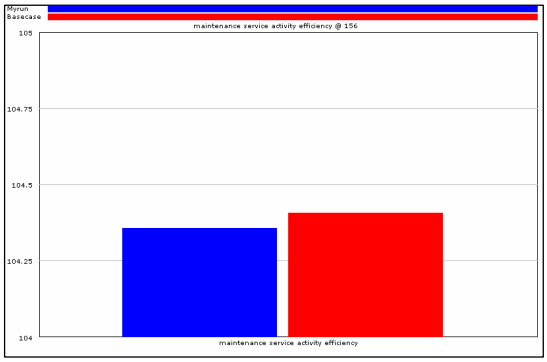
Graph

The Graph tool displays the value of the PI
Over the entire length of the business game played


maintenance service object production/operating cycle time
1
0.95
0.9
0.85
0.8
0 12 24 36 48 60 72 84 96 108 120 132 144 156
Time (Week)
"maintenance service object production/operating cycle time" : Myrun
"maintenance service object production/operating cycle time" : Basecase

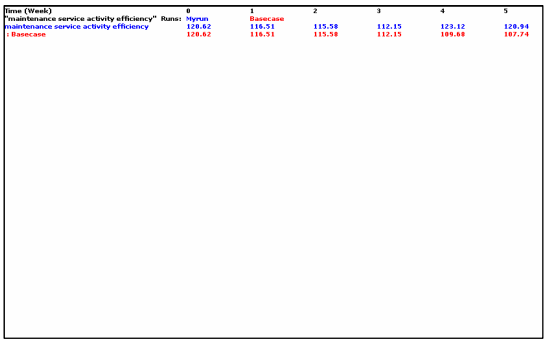
Bar Chart

The Bar Chart displays the value of the PI at one point in time. By default this is at the end of the game, but this can be changed by moving the scroll bar shown below



Table

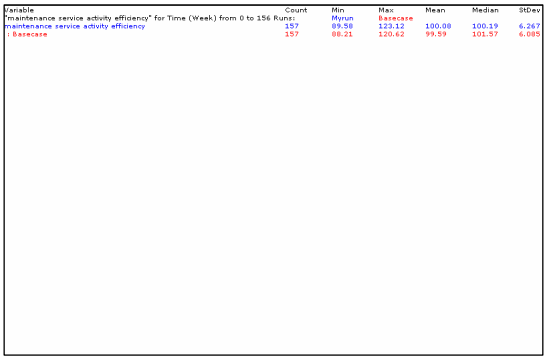
The table tool displays the actual PI value for each week of the game played. If more than one game result set is loaded, the individual runs are colour coded.


Time (Week)
"maintenance service activity efficiency" Runs:
0 1 2 3 4 5
Myrun Basecase
maintenance service activity efficiency 120.62 116.51 115.58 112.15 123.12 120.94
: Basecase 120.62 116.51 115.58 112.15 109.68 107.74

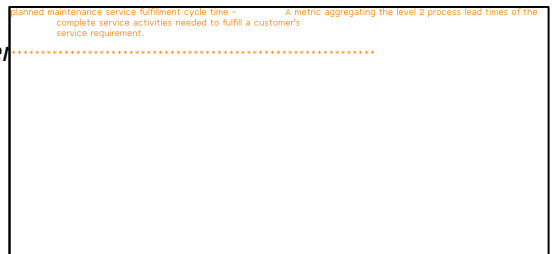
Statistics

Basic statistics are available for the PI over the duration of the game. These include

- Min
- Max
- Mean
- Median
- Std Deviation



Documentor


planned maintenance service fulfillment cycle time
A metric aggregating the level 2 process lead times of the complete service activities needed to fulfill a customer's service requirement.

The Documentor tool will display a more detailed
Description of the PI selected.

Menu Options

Load Results	will allow the user to load or unload result files to be displayed in the charts
List All Variables	displays a list of all model variables, not just the Level 1 PIs to select from
Subscripts	allows user to select which process types to display
Compare Run Inputs	will list the input differences between two sets of game results
Copy	will copy the current chart into the clipboard
Print	Not yet implemented
Reset Zoom	Not yet implemented

Table 1 - Analysis Screen Menu Options

View Best Practices Implemented

Selecting the above button will display a Gantt chart in the chart window.

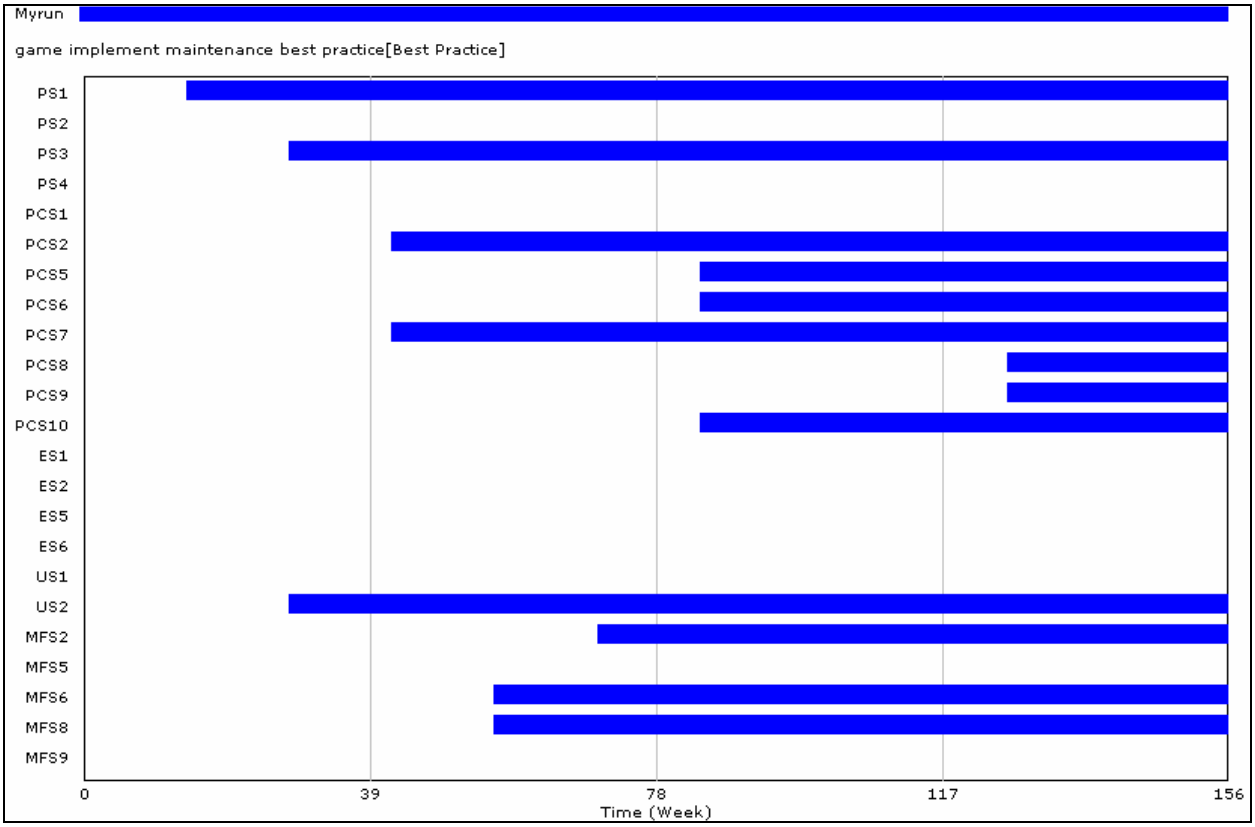


Figure 27 - View Best Practices - Output

This Gantt chart displays the times at which the user implemented the Best Practice options during the game.

For online help, click on any of the information icons ⓘ

To return to the Main Menu, click on the icon.